

CRISP-X

TEST REPORT

**Version <1.2>
<10/13/2014>**

VERSION HISTORY

In versions before v1.2, we did informal interior test report in Chinese, which helps us track bugs in our project. In version 1.2, we provide detailed test report.

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
1.0	Youjin Zhang	08/14/2014	Bill Xue	08/17/2014	Test font-ends communication with server in json format
1.1	Yi Zhao	08/27/2014	Te Wu	08/29/2014	Test for server services like user management, results push service
1.2	Bill Xue	10/04/2014	Ying Tang	10/13/2014	Test for performance and evaluate test coverage

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1.0 INTRODUCTION

1.1 PURPOSE

This *CRISPR-X* Test Report provides a summary of the results of test performed as outlined within this document.

2.0 TEST SUMMARY

[Include basic information about what was tested and what happened.]

Project Name: *CRISPR-X*

Version Number: *v1.2*

Additional Comments: *Test for software performance and evaluate test coverage*

2.1 SYSTEM

Test for querying no-exit chromosome.

Test Owner: *Bill Xue*

Test Date: *10/04/2014*

Test Results: *Finished. Return null results, but no alarm for this illegal query*

Additional Comments: *To check this test results in details, please view this log, https://travis-ci.org/igemsoftware/UESTC-Software_2014/builds/37046802 on line 180 to 187*

2.2 SYSTEM

Test basic user query and response in the situation that results isn't in Table_results.

Test Owner: *Bill Xue*

Test Date: *10/05/2014*

Test Results: *Failed. Segmentation fault*

Additional Comments: *To check this test process in details, please view this log, https://travis-ci.org/igemsoftware/UESTC-Software_2014/builds/37053903 . Now, this bug has been corrected.*

2.3 FUNCTION

Test the function of querying location using gene name.

Test Owner: *Bill Xue*

Test Date: *10/06/2014*

Test Results: *Passed. Returns right results*

Additional Comments: *To check this test case, please view this log, https://travis-ci.org/igemsoftware/UESTC-Software_2014/builds/37140231 on line 181 to 184*

2.4 FUNCTION

Test function of checking RFC

Test Owner: *Bill Xue*

Test Date: *10/06/2014*

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Test Results: *Finished. Returns right results*

Additional Comments: *To check this test case, please view this log, https://travis-ci.org/igemsoftware/UESTC-Software_2014/builds/37140820*

2.5 FUNCTION

Test for querying no-exit gene.

Test Owner: *Bill Xue*

Test Date: *10/11/2014*

Test Results: *Finished. Return null results, but no alarm for this illegal query*

Additional Comments: *To check this test results in details, please view this log, https://travis-ci.org/igemsoftware/UESTC-Software_2014/builds/37676972 on line 194 to 200*

2.6 FUNCTION

Test for illegal RFC combination.

Test Owner: *Bill Xue*

Test Date: *10/12/2014*

Test Results: *Failed. Deadlock!*

Additional Comments: *To check this test results in details, please view this log, https://travis-ci.org/igemsoftware/UESTC-Software_2014/builds/37691063*

3.0 TEST ASSESSMENT

This version of test report, we focus on our server performance to illegal query. And in these test cases, we integrate with coverall.io to evaluate our test coverage. As these above test cases show, the query attributes which users manually fill, on boundary, our server response with null sgRNA results. But no alarm for these illegal query. This part of test cases aren't passed. Most badly, we found some fatal error, the deadlock! Multi threads enhance program efficiency, but sometimes this unpredictable. In fellow work, we need check our semaphore control, and keep our program more safety. Through these test cases, our test coverage increased to 83%, in details please check our reference 1. And all detailed automatic test process can be found under reference 2.

4.0 TEST INSTANCES

4.1 RESOLVED TEST INCIDENTS

Query in json.:

'{"specie":"Saccharomyces-cerevisiae","location":"NC_001134-chromosome2:200..2873","pam":"NGG","rfc":"100010"}'

Query in json:

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```
'{"specie":"Saccharomyces-cerevisiae","gene":"ATP1","pam":"NGG","rfc":"011101"}'
```

Query in json:

```
'{"specie":"Saccharomyces-cerevisiae","location":"NC_001135-chromosome3:200..2873","pam":"NGG","rfc":"100010"}'
```

4.2 UNRESOLVED TEST INCIDENTS

Query in json:

```
'{"specie":"Saccharomyces-cerevisiae","gene":"XXXXXX","pam":"NGG","rfc":"011101"}'
```

No alarm message.

Query in json:

```
'{"specie":"Saccharomyces-cerevisiae","location":"NC_001134-chromosome2:200..2873","pam":"NGG","rfc":"110010"}'
```

No alarm message.

Query in json:

```
'{"specie":"Saccharomyces-cerevisiae","location":"NC_001135-chromosome3:200..2873","pam":"NGG","rfc":"100010"}'
```


Deadlock.

7.0 RECOMMENDATIONS

Provide alarm message for every type of illegal queries. And check the thread synchronization carefully, avoiding deadlock.

APPENDIX A: Test Report Approval

The undersigned acknowledge they have reviewed the [CRISPR-X Test Report](#) and agree with the approach it presents. Changes to this **Test Report** will be coordinated with and approved by the undersigned or their designated representatives.

Signature:		Date:	10/13/2014
Print Name:	Ying Tang		
Title:	CRISP-X Test report		
Role:	Project Manager		

APPENDIX B: REFERENCES

The following table summarizes the documents referenced in this document.

id	Description	Location
1	<i>Our test coverage records.</i>	https://coveralls.io/r/uestc-igem-2014/CRISPR-X?branch=master
2	<i>Our automatic test logs</i>	https://travis-ci.org/igemsoftware/UESTC-Software_2014

APPENDIX C: KEY TERMS

The following table provides definitions for terms relevant to this document.

Term	Definition
<i>Segmentation fault</i>	<i>segmentation fault (often shortened to segfault) or access violation is a fault raised by hardware with memory protection, notifying an operating system (OS) about a memory access violation</i>
<i>deadlock</i>	<i>A deadlock is a situation in which two or more competing actions are each waiting for the other to finish, and thus neither ever does</i>